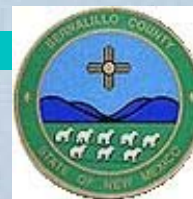


ALBUQUERQUE / BERNALILLO COUNTY
AIR QUALITY CONTROL BOARD
NEWSLETTER



Martin J. Chavez, Mayor

Thaddeus Lucero,
Bernalillo County Manager

The Air Shed

PUBLISHED MONTHLY BY THE AIR QUALITY DIVISION

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AIR QUALITY INDEX:

GOOD!

FOR ACTUAL AQI VALUES,
SEE PAGE 5

March-April, 2004

Volume 5, Number 3

**City of Albuquerque
Environmental Health Department
Director - 768-2600**

**Albuquerque / Bernalillo County
Air Quality Control Board
768-2600**

**Air Quality Division Manager
768-1930**

**Important Phone Numbers
Air Quality Index & Pollen
768-4731 opt 1 or 766-7664
Burn/No Burn 768-BURN (2876)**

**Ambient Air
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Standards
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& Field Enforcement - 768-1930**
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◆ Topsoil Disturbance
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◆ *The Air Shed* Newsletter

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◆ Permitting Policy / Development
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◆ Aerometric Information Retrieval
System [AIRS]

Control Strategies- 768-2600
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◆ Preparation of State Implementation
Plan elements
◆ Air Quality Control Board
◆ Review Federal environmental
assessments

**Public Health
Initiatives - 767-5621**
◆ Air Quality Complaints
◆ Indoor Air

Quality Assurance - 768-1963
◆ EPA Reporting
◆ Review & Validation of Data

Air Quality Division Hosts National Hispanic Environmental Council



Albuquerque was chosen to host the 9th annual US EPA Sponsored National Hispanic Environmental Council. Undergraduate and Graduate students from across the US gathered to explore the career opportunities in the applied sciences. The City of Albuquerque Air Quality Division was asked by the US EPA to discuss the City's Ambient Air Monitoring Network and to conduct a station tour of the Del Norte air monitoring station. Shown above is Mr. Dwayne Salisbury, of the Ambient Air Monitoring Section, providing an overview of the operation and use of the newly installed speciation sampler to the students. The entire group is pictured at top.



AIR QUALITY CONTROL BOARD REPORT

Summary of Activities* March 10, 2004 Meeting of the Albuquerque/Bernalillo County Air Quality Control Board

Members Present:

Dr. Betty Chang
Ms. Sue Umshler
Ms. Karen Wentworth, Vice Chair

Hearing:

The Board heard testimony regarding a proposal to amend 20.11.1 NMAC, General Provisions and to incorporate the complete and amended 20.11.1 NMAC into the New Mexico State Implementation Plan for air quality (SIP), and a proposal to adopt a new regulation 20.11.8 NMAC, Ambient Air Quality Standards, and to incorporate the newly-adopted 20.11.8 NMAC into the SIP. The Air Quality Division provided the technical staff testimony. Mr. Paul Seby also provided testimony regarding his client's interests in the abovementioned proposals. Since a quorum of Board Members were not present for this testimony, the hearing record will remain open until the Board reconvenes on April 14, 2004, at which time testimony will continue.

Regular Board Meeting

The meeting of the Albuquerque/Bernalillo County Air Quality Control Board (Board) was cancelled due to a lack of quorum. Only three Board members were present.

Albuquerque / Bernalillo County
Air Quality Control Board

Board Members & Staff

Stephen Pilon (City) Chair
Karen Wentworth (County) Vice Chair
Paul Silverman - County
Sue Umshler - County
Betty Chang - City
Vacant - City
Vacant - City

Alfredo Santistevan, Director
Environmental Health Department

Isreal L. Tavaréz
Air Quality Division Manager/
Secretary to the Board

Adelia Kearny
Assistant City Attorney

Glen Dennis
Vehicle Pollution Management Division Manager

Elizabeth Begay
Environmental Planning Commission Liaison

Monthly Board Meetings

Board meetings are usually held the second Wednesday of each month at 5:15 p.m. in the Council/Commission Chambers, lower level, Albuquerque/Bernalillo County Government Center, 1 Civic Plaza, 400 Marquette Avenue NW Albuquerque, NM.

Agendas, which will show the correct date and meeting place, are generally available three days before the meeting and can be obtained by contacting Mr. Neal Butt at 505-768-2660 or via e-mail at: nbutt@cabq.gov.

Notice to persons with disabilities: If you have a disability and require special assistance to participate in any Board meeting please call the Air Quality Division at 505-768-2600 (Voice) or 505-768-2482 (TTY)



* Action items recorded from draft minutes still subject to Board approval at press time.

Vehicle Pollution Management Division Feature

Vehicle Inspection and Maintenance Program:

The Division continues with certification tests on the new BAR97 analyzer from Worldwide Emissions. It is estimated that the certification process is more than 95% complete with the final software version expected from the manufacturer by April 9th. Several Worldwide analyzers have been built and are awaiting shipment from California as soon as the software is approved and the machine is certified. New BAR97 analyzers should be up and running in the program before the end of April. All Air Care Stations will have to install the BAR97 analyzer by July 1, 2004. The cost of the Worldwide analyzer is \$12,995 which is several thousand dollars less than the current generation of BAR90 analyzers which were required as of January 1, 1996. Environmental Service Products (ESP), the other analyzer manufacturer which had demonstrated a strong interest in supplying BAR97 analyzers decided to withdraw from the Albuquerque program and did not send a unit for certification. The new analyzers are capable of conducting On-Board Diagnostic (OBDII) testing of 1996 and newer vehicles, traditional two-speed idle exhaust analysis on pre-1996 vehicles and pressurized gas cap testing on all vehicles. The new analyzers will also allow the Division to reduce the amount of paper generated and stored in the program by more than half.

Gas Cap Testing and Voucher Program:

VPMD hosted Mayor Chavez for a Press Conference announcing the kick-off of the Gas Cap Voucher Program made possible by EPA grant funding obtained by the Air Quality Division. The Mayor was a quick study and spoke well to the importance of a properly sealing gas cap in terms of fuel savings and reducing gasoline vapors and their contribution to rising ozone levels in the summer months. The Mayor and Division Manager demonstrated how the new BAR97 analyzer can pressure test and detect a leaking gas cap in less than a minute. During the demo, the Mayor encouraged the public from throughout the region to take advantage of the free gas cap test and \$10 voucher towards the replacement of a faulty cap. Following the press conference, VPMD received numerous phone calls inquiring about the voucher program and a marked increase in vehicles coming in for the free gas cap test. To date, the Division has tested thirty-four vehicles and issued eight gas cap vouchers.



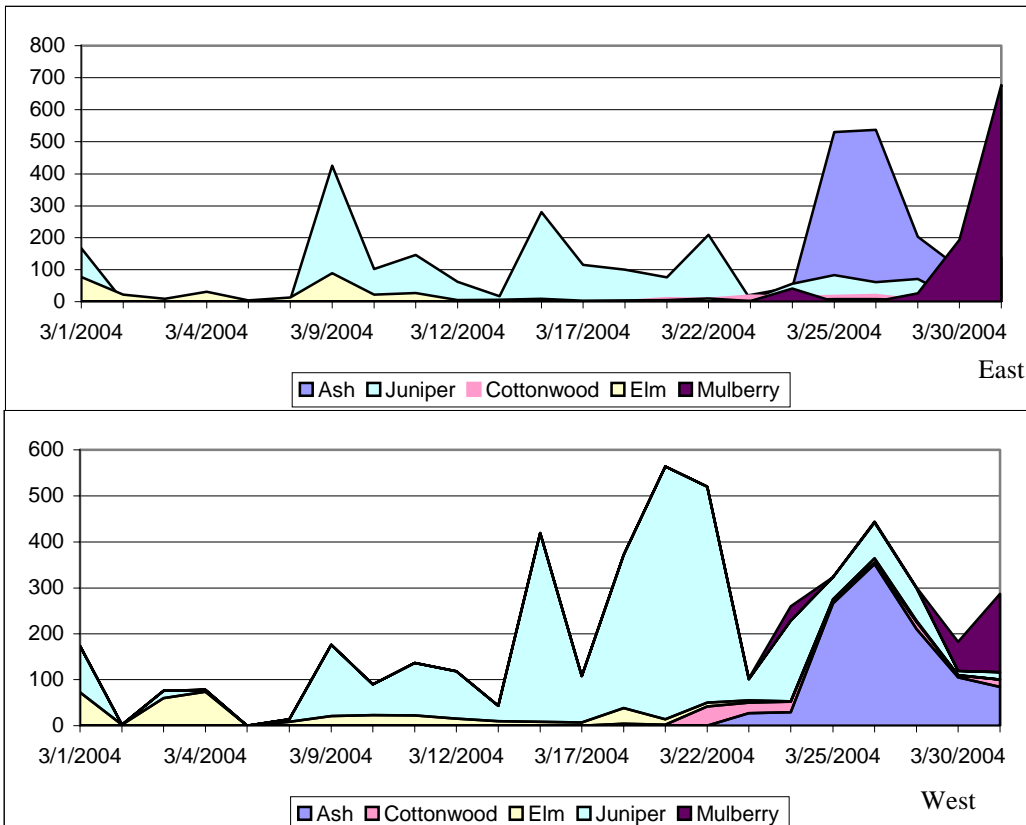
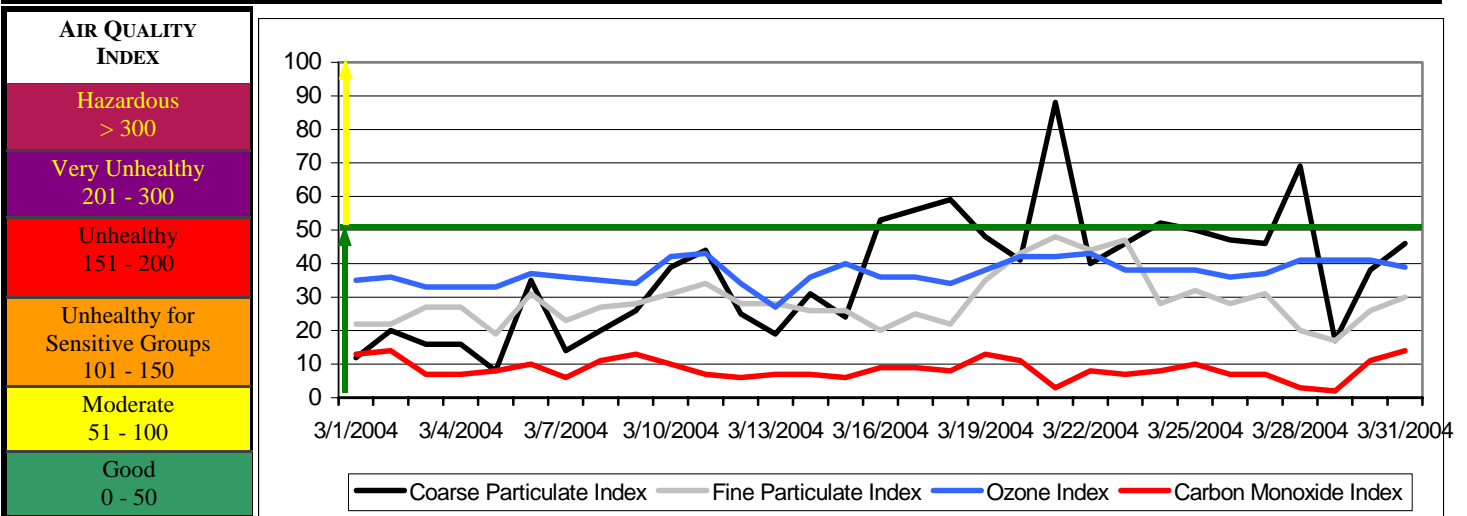
Alternative Fuel Vehicle Update:

VPMD Manager Glen Dennis gave two presentations at the local Fleet Managers Conference as part of the annual National Alternative Fuel Vehicle Odyssey held at the University of New Mexico Continuing Education Center on April 2nd. The presentations focused on Regional Airshed Issues and Recent Changes to the Emission Testing Regulation as they affect Fleets. The morning session focused on light duty AFVs while the afternoon session was devoted to alternative fuel applications for heavy duty fleets. The workshops were sponsored by the US Department of Energy and the Land of Enchantment Clean Cities Coalition and featured numerous alternative fuel vehicles on display and in some cases available for test drives. Vehicles on display ranged from the 2004 Honda Civic GX (dedicated compressed natural gas - the cleanest internal combustion engine vehicle in the world - and its made in Ohio) to the 2004 Motor Trend mid-size Car of the Year Toyota Prius (a gas-electric hybrid that has an EPA fuel economy rating of 60 mpg) to a large Schwan's Delivery truck fueled by propane. New Mexico Toyota dealers reported a waiting list through September or October for the Prius and are already taking deposits on the Toyota Highlander, an electric hybrid SUV that will be available in 2005 and is estimated to get over 40 mpg. The Ford Escape SUV electric hybrid should be available in the Fall of 2004 and is also estimated to get over 40 mpg. The Environmental Health Department is currently in the process of purchasing several Honda Civic electric hybrids which get 45 to 50 mpg and are the only electric hybrid currently on the state purchasing contract.

AIR QUALITY DATA FOR MARCH, 2004

The Air Quality Index [AQI] values indicate how clean or polluted ambient air is, and if there are any health concerns associated with a specific value. The AQI in Bernalillo County is measured for four [4] nationally regulated air pollutants: Carbon Monoxide [CO], Ozone [O₃], Coarse Particulate [PM₁₀] and Fine Particulate [PM_{2.5}].

As shown by the graph below, AQI values were "Good" to "Moderate" in March, which means that air pollutants at this level pose little or no health risks to our community, but those members of our community who already have respiratory problems may be slightly affected. Thus, as the values increase into a higher category, health risks will similarly increase. As you may have guessed, the last category, "Hazardous", with AQI values greater than 300, is very serious and can be detrimental to the health of the whole community even if emergency health warnings are triggered. Call the [Air Quality Information Line](tel:766-7664) at 766-7664 or 768-4731



Pollen data is reported Monday - Friday, during the months of March - October. It is reported as grains of pollen per cubic meter of air sampled. Air Quality Monitoring staff collect data from areas east and west of the Rio Grande within the greater Albuquerque metropolitan area. Pollen data from a previous 24-hour sampling period is then published in local newspapers in the weather section, broadcast with local news station weather reports, or can be obtained by calling the [Air Quality Information Line](tel:766-7664) 766-7664

Allergies? The Answers Are Blowin' in the Wind



Many people rely on Punxsutawney Phil's ability to see his shadow to predict the onset of spring. Others of us have a much more reliable method for sensing the change in the season. See if this sounds familiar. Itchy, scratchy eyes... sore throat... sneezing...coughing... clogged sinuses... headache... runny nose? If you presently harbor any one or all of those symptoms, you , along with millions of other people on this planet, may suffer from what is commonly known as hay fever.

The symptoms described above can represent the body's attempt to ward off a sudden, massive attack of devilish little grains of pollen, nature's device for perpetuating the existence of flowering plants. While not intrinsically harmful, large numbers of pollen grains fool the body into thinking it's under attack. The body responds by activating its internal defenses, the immune system. The sneezing, coughing, and runny nose represent the body's attempts to rid itself of these little invaders. If you develop those symptoms this time of year you may be suffering from good, old-fashioned pollen allergies. While allergies can be caused by a variety of irritants, pollen is one of the most-likely triggers, especially during the months of spring.

Plants produce tiny round or oval grains of pollen in their male organs, called **anthers**. For fertilization to occur, the pollen must then be deposited on the female organ of the plant, called a **stigma**. Once pollinated, the plants then produce seed. Trees, weeds, flowers and grasses all produce pollen. Some plants use their pollen to fertilize themselves (monoecious) while most plants cross-pollinate (pollen is transported from one member of a given species to another of the same species). Pollen can be transported by insects like bees from one plant to the next (zoophyly) or it can simply be transported by the wind (anemophyly). Most plants that rely on insects for pollination have either large, colorful flowers or very strong perfumes to attract the bugs. But, the large, heavy, waxy pollen grains typical of these types of plants don't often cause allergies since the pollen grains are too heavy to remain airborne long enough or in sufficient densities to be present in the air we breathe. Allergies are more often caused by the pollen of the less-showy trees and weeds that rely on wind for transport. The pollen produced by these plants is small, light and dry, perfect for sailing on the zephyrs of spring. And since wind can be a fickle form of transport, plants that rely on it for survival simply play the odds by producing gazillions of pollen grains. One ragweed plant, for instance, can produce a million pollen grains per day. Ragweed pollen has been found 400 miles out to sea and as much as two miles high. Generally the more prolific pollen-producing plants cause the most allergies.

Though certainly more prevalent in the spring, hay fever can occur at different times of the year, depending on the flowering cycle of the specific plants involved and whether or not a particular person is especially sensitive to any given pollen type. The trigger that determines when a given plant begins its flowering cycle appears to be driven by the relative length of night and day rather than by weather. However, the amount of rainfall the plant receives does play a role in how much pollen it produces. And, though the flowering period of a plant can last for weeks, the actual time that it actively produces pollen is much shorter.

Trees common to New Mexico that are known to be allergens include Ash, Cottonwood, Elm, some Pines, Junipers, Maples, Mulberries and Oaks. New Mexico weeds known to be allergens include Chenopodiaceae (Kochia, Russian Thistle, Pigweed, Amaranth, Four-Wing Saltbrush, etc.), Ragweed and Sage. Grasses that cause allergies include Barley, Bent Grass, Bermuda Grass, Blue Grass, Fescue, Grama, Rye, Sedge and Timothy.

Plant	Pollen Production Period (Month)											
	January	February	March	April	May	June	July	August	September	October	November	December
Juniper/Cedar												
Elm												
Ash												
Cottonwood												
Mulberry												
Chenopodiaceae												
Sage												
Grass												
Ragweed												

For daily pollen counts for the Albuquerque area, call 505-766-7664 or 505-768-4734. Also check in at the City of Albuquerque's website at www.cabq.gov. The website is currently undergoing renovation but will soon feature daily AQI and pollen information as well. Additional information about pollen can be obtained at www.pollen.com. Also see page 5 of this newsletter.

Diesels~ Today and Tomorrow

Take a look around you. Chances are, everything that is man-made within your field of vision has been transported in a vehicle powered by a diesel engine. Even the terrain beneath your feet has likely been sculpted using the power provided by this form of combustion engine. And yet the diesel engine will be among the last of the various types of internal combustion engines to be regulated for emissions. What's taken so long?

Just like their gasoline-fueled brethren, diesel-fueled compression engines present some unique hurdles in terms of cleaning up their exhaust streams.

For instance, in today's modern **gasoline**-fueled passenger cars and light trucks, on-board computers using feedback data from various engine sensors, control the engine's fuel/air ratio, timing and other important tune-up parameters to ensure the most efficient engine operation and lowest emissions. Critical components in that system were and still are incompatible with leaded gasoline. Oxygen sensors and catalytic converters cease to function when coated with a layer of lead. So, unleaded gasoline was initially developed in part, to protect the computer components on those vehicles.

Today, sophisticated catalytic converters are available for diesel engines, too. But these devices are irreversibly damaged by the sulfur commonly found in currently-available diesel fuel. The United States Environmental Protection Agency (EPA) has proposed new standards that would reduce the amount of sulfur in diesel fuel by 97% by 2006, thereby making the use of the new diesel catalytic converters possible. Dramatic reductions in diesel emissions are expected to follow.

EPA has also proposed a new particulate matter standard for diesel engines that will go into effect in 2007. Much of the particulate in diesel exhaust is soot, carbon-based ash. The new standard calls for a ten-fold reduction in the allowed amount of particulate emissions. To meet the new standard, diesel engine manufacturers are expected to use self-cleaning particulate traps in the vehicle exhausts, devices that essentially further oxidize the soot particles into less hazardous emissions.

But, diesels are perhaps best known for their emissions of oxides of nitrogen (NO_x). Oxides of nitrogen couple with volatile organic compounds in the presence of sunlight to form photochemical smog. It takes high temperatures and pressures to fuse nitrogen and oxygen together to form a molecule of NO_x . The environment inside the diesel engine combustion chamber is the perfect oven in which to make it. Luckily, there's a simple device called an Exhaust Gas Re-circulation (EGR) valve that's been used on gasoline engines for years to control NO_x that can dramatically lower the amount of NO_x produced by the diesel engine as well.

The best way to lower NO_x emissions is to simply not make it in the first place. EGR valves lower combustion chamber temperatures by re-circulating a small amount of exhaust gas back into the engines cylinders at critical moments. Since exhaust gas is very low in oxygen content, its re-introduction into the combustion chamber displaces a small amount of fuel/air with an inert gas. The resulting combustion events produce less heat since the fuel/air charge has been diluted with exhaust gas. The more EGR that is re-circulated, the lower the combustion temperature, the lower the NO_x . Most diesel engine manufacturers are expected to meet the new NO_x standards through the use of EGR valves on their engines.

EPA's review of industry progress shows that engine manufacturers are on target to introduce new engines in 2007; diesel particulate filters that reduce harmful PM emissions by more than 90 percent will be used by all manufacturers; NO_x control will be accomplished using proven technologies some of which are in production today; and engine manufacturers will conduct early prototype testing with trucking customers in 2005. These new clean engines operated on the 15 ppm sulfur diesel fuel will reduce NO_x emissions by 50 percent and PM emissions by more than 90 percent and will substantially contribute to air quality improvement across the country, help states meet Clean Air Act goals and further protect public health and the environment.

